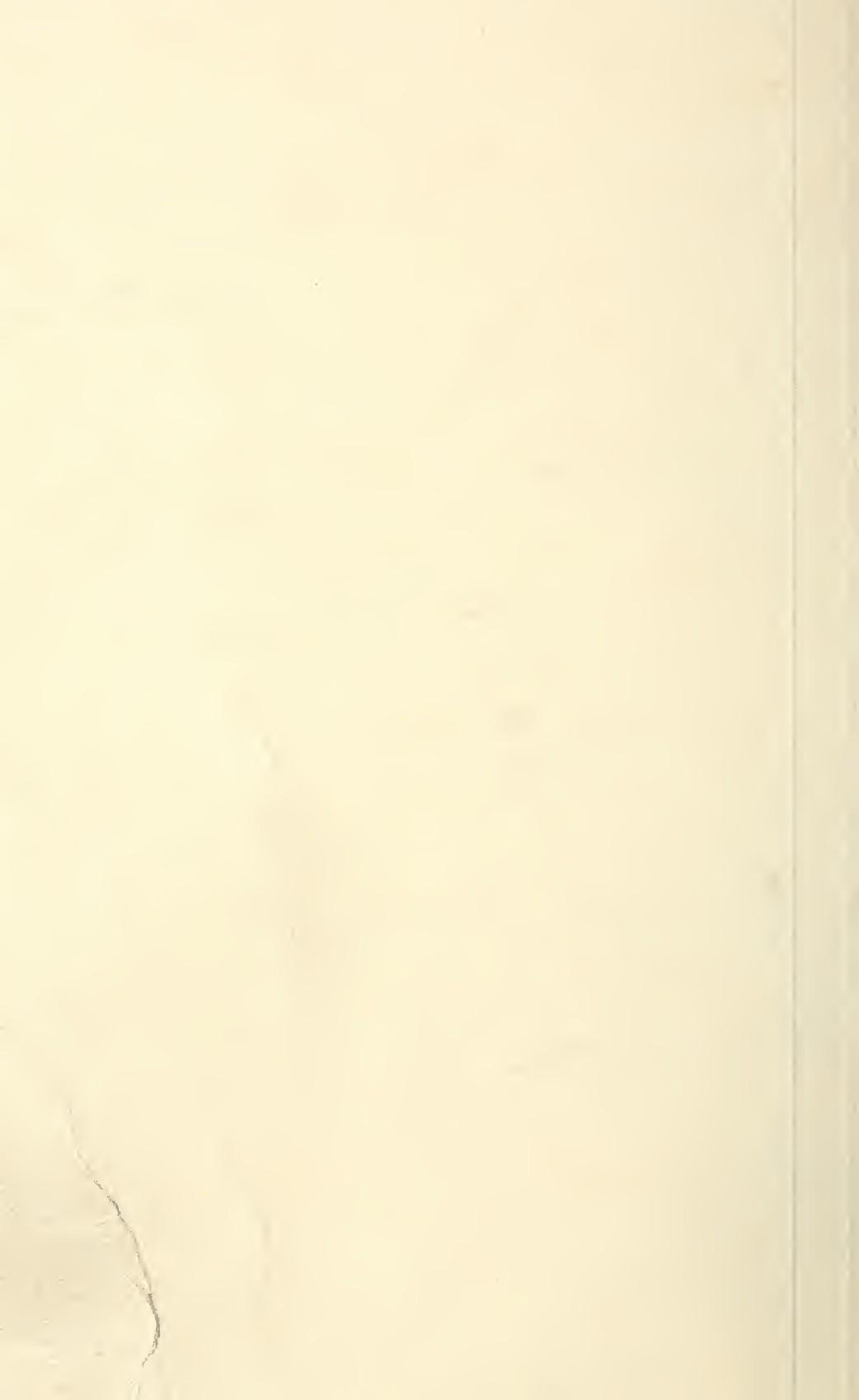


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**Do not assume content reflects current scientific knowledge, policies, or practices.**



# ARS SCIENCE HALL OF FAME

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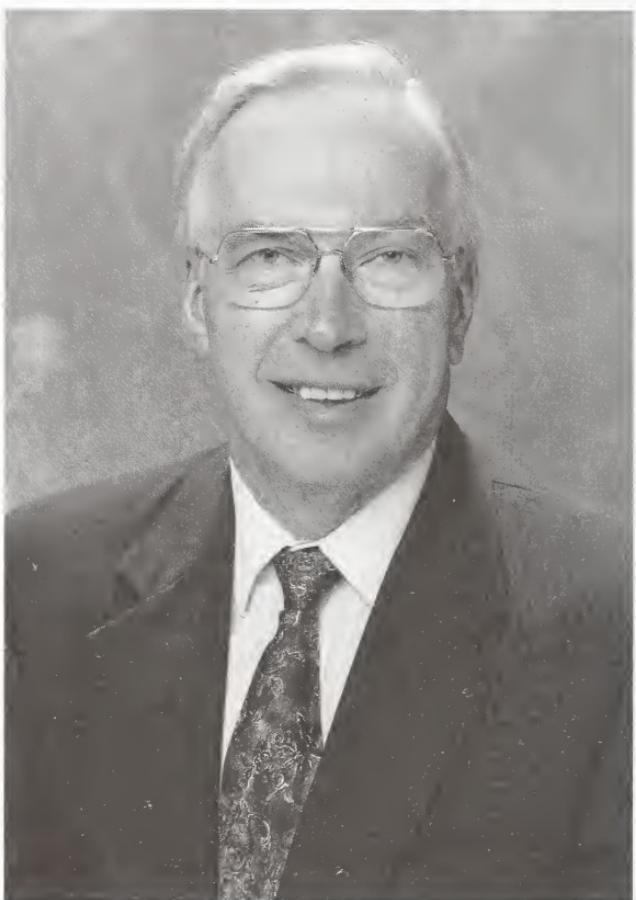
November 28

2001

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Agricultural Research Service  
U.S. Department of Agriculture



## SCIENCE HALL OF FAME

**Lawrence A. Johnson**

Research Leader (Retired)

Germplasm and Gamete Physiology Laboratory  
Beltsville, Maryland

*For pioneering research in developing the first useful technology for gender preselection of animal and human offspring and for outstanding contributions to semen preservation and artificial insemination in swine.*



awrence A. Johnson is recognized as the world authority on sex preselection in mammals, having developed the only validated method for selecting the sex of offspring at conception.

Sex preselection has given the livestock industry the ability to manage the proportions of male and female offspring in their breeding herds. The method is currently being applied commercially to cattle production in several countries and has been applied to human medicine for prevention of sex-linked diseases.

Earlier in his career Johnson codeveloped the first successful method of deep-freezing swine semen for commercial use. Later he and Dutch scientists collaborated to develop a semen extender, which is used for more than 15 million inseminations a year. These discoveries are recognized for their assistance in improving the genetics of swine worldwide.

Johnson has published more than 300 scientific articles. He has received the Alexander von Humboldt Foundation Award for "the most significant accomplishment in American Agriculture in the previous five years." He has been awarded the USDA Superior Service Award, the ARS Distinguished Research Scientist Award and the T.W. Edminster Award, and the Animal Physiology and Endocrinology Award from the American Society of Animal Science

Johnson was recognized with honorary membership in the Japanese Society of Swine Science. He received the Distinguished Alumnus award from his alma mater, the University of Wisconsin at River Falls.



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## SCIENCE HALL OF FAME

**William E. Larson**

National Technical Leader (Retired)  
Tillage/Residue Management Investigation  
St. Paul, Minnesota

*In recognition of a pioneer who respected soil as a natural resource and devoted a research career toward improving its quality.*

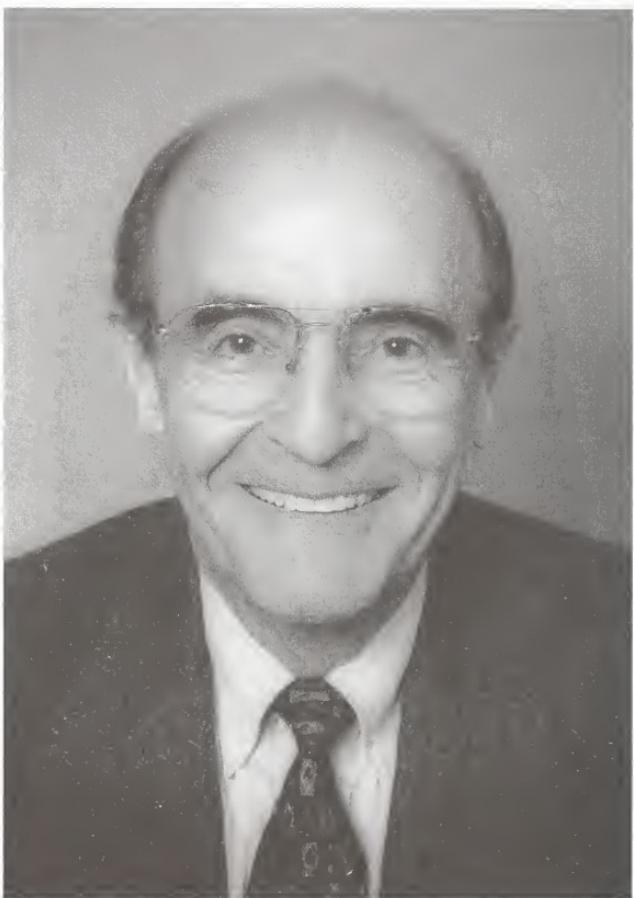
illiam E. Larson, an authority in soil and its importance to agriculture and the environment, is widely respected for his understanding and respect of soil as a natural resource and for its stewardship. He recognized early the fundamental nature of organic matter in creating soil quality.

Larson's pioneering research discovered how much residue must be returned to the soil to maintain the necessary organic matter content to inhibit erosion and maintain fertility. With his colleagues, Larson developed a model to estimate how much crop residue can be removed from the land for energy production without allowing excessive erosion. The findings have helped to shape U.S. energy policy.

Larson recognized the importance of erosion on crop production and led development of the Productivity Index for soils. He also spearheaded studies showing that solid municipal waste can be used as a safe and effective fertilizer and amendment.

Larson has been sought out by the Corps of Engineers, EPA, and Congress for his expertise in soil erosion. He was awarded the Medal of Honor and Appreciation from Morocco, an Honorary Lifetime Membership in the International Soil Tillage Research Organization (which he helped found), and the EPA National First Place Research Award. He was head of the Soil Science Department at the University of Minnesota, where a chair was named after him. He is a fellow and past president of both the American Society of Agronomy and the Soil Science Society of America.

Larson has also held positions in many professional societies and received many other honors and awards.



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SCIENCE HALL OF FAME

**William L. Mengeling**

Research Leader

Virus and Prion Diseases of Livestock Research Unit  
Ames, Iowa

*For outstanding research contributions and leadership in the field  
of viral diseases of swine.*



William L. Mengeling is one of the world's foremost veterinary virologists. His major contributions to the control of viral diseases of swine have had extensive effects on the international swine industry.

During his early career, Mengeling developed the main test used in eradicating hog cholera from the United States, leading to savings of \$100 million a year in the swine industry. He was also the first U.S. scientist to isolate porcine parvovirus and establish its role in maternal reproductive failure of swine.

Mengeling's research has revealed the pathogenesis of several other swine diseases. For example, he is a leading authority on porcine reproductive and respiratory syndrome (PRRS). He coinvented an attenuated-virus vaccine for PRRS, as well as a widely used procedure for differentiating vaccine and virulent strains of PRRS.

Mengeling has received the USDA Distinguished Service Award, the Veterinary Medical Research Award from the American Veterinary Medical Association, the Distinguished Alumnus Award from Kansas State University, the William P. Switzer Award from Iowa State University, and the Howard W. Dunne Memorial Award from the American Association of Swine Veterinarians.

Mengeling is a diplomate in the American College of Veterinary Microbiologists. He was chairman of the Committee for Coronaviruses of the WHO/FAO program for Comparative Virology. Mengeling was a member of U.S. Animal Health Association committees on Pseudorabies, on Biotechnology, and on Transmissible Diseases of Swine and currently serves on the International Committee on Taxonomy of Viruses.

# ARS SCIENCE HALL OF FAME

1986

## Edward F. Knipling

*For pioneering research and leadership in development of the sterile insect technique, which led to the eradication of the screwworm, and of other technologies to suppress and manage insect pests.*

1987

## Howard L. Bachrach

*For pioneering research on the molecular biology of foot-and-mouth disease that led to development of the world's first effective subunit vaccine for any disease of animals or humans through the use of gene splicing.*

## Myron K. Brakke

*For consistent, career-long valuable contributions to the science of virology, particularly plant virology.*

## Glenn W. Burton

*For outstanding achievements in forage and turf science, which have had extraordinary effects on the forage-based cattle industry, the turf industry, and agriculture worldwide.*

## Wilson A. Reeves

*For outstanding research and leadership in the field of textile chemical finishing that have significantly benefited agriculture and consumers.*

## Earnest R. Sears

*For pioneering work in wheat genetics and for discoveries on chromosomal mechanisms that established standards in animal, plant, and human genetics.*

## Orville A. Vogel

*For development of the first useful semidwarf wheats and of innovative production systems that made the Pacific Northwest a major source of soft white wheat, inspired similar research efforts throughout the world, and sparked the Green Revolution.*

## Cecil H. Wadleigh

*For elucidating the mechanisms through which crops respond to salinity and water stress and for inspired planning and leadership that enabled and motivated those who worked with him to expand and make use of knowledge of soils, water, and air and their interactions with plants.*

**1988**

**Francis E. Clark**

*For outstanding research leading to greater understanding of soil, plant, and microbial interactions and of nutrient cycling in terrestrial ecosystems.*

**Edgar E. Hartwig**

*For research in soybean breeding and genetics that has been a major factor in soybeans becoming the second most valuable U.S. crop and particularly for developing cultivars that thrive in the South.*

**Ralph E. Hodgson**

*For significant contributions to the knowledge of ruminant nutrition and for visionary leadership, both domestic and international, in the animal industries.*

**Hamish N. Munro**

*For career-long contributions to the science of nutrition, particularly on the relationship of dietary protein and iron to the health of the elderly, and for promotion of studies on aging.*

**Jose Vicent-Chandler**

*For research leading to new and greatly improved production systems for beef, milk, coffee, plantains, and rice for Puerto Rico and Caribbean countries.*

**1989**

**Douglas R. Dewey**

*For world leadership in genetics and taxonomy of the Triticeae tribe of grasses and for development of the cytogenetic basis for creating new grass hybrids.*

**Theodor O. Diener**

*For conceptualizing and discovering viroids, for leading research on viroid detection and control, and for inspiring new approaches in the search for causes of several serious diseases affecting plants, livestock, and humans.*

**Karl H. Norris**

*For developing principles and instruments using the electromagnetic wave spectrum to make rapid nondestructive measurements for evaluating quality of agricultural products.*

**John F. Sullivan**

*For engineering contributions to the food-processing and preservation industries, including development of instant potato flakes and of batch and continuous-explosion puffing.*

**1990**

**Theodore C. Byerly**

*For extraordinary contributions as a scientist, research leader, and administrator to the success of agricultural research programs and advances in U.S. and world agriculture.*

**Gordon Dickerson**

*For research contributions widely used by breeders to increase production efficiency of cattle, sheep, swine, and poultry.*

**Robert W. Holley**

*For isolation and characterization, including the first nucleotide sequence, of transfer ribonucleic acid (tRNA).*

**Virgil A. Johnson**

*For outstanding contributions to development of superior bread wheat cultivars and of improved wheat germplasm and for vigorous promotion of national and international cooperation among wheat breeders.*

**George F. Sprague**

*For outstanding contributions to effective methods of hybrid corn breeding and germplasm improvement.*

**1991**

**John H. Weinberger**

*For outstanding lifelong contributions in development of fruit varieties and fruit-breeding technology.*

**Walter H. Wischmeier**

*For developing the Universal Soil Loss Equation, which has been widely used for three decades worldwide in conservation and management of our natural resources.*

**1992**

**Raymond C. Bushland**

*For pioneering research leading to screwworm eradication by the sterile insect technique and for research leading to control of typhus vectors.*

**Lyman B. Crittenden**

*For significant contributions to retroviral genetics, transgenic animal development, and genome mapping in poultry.*

**Arnel R. Hallauer**

*For increasing understanding and use of quantitative genetics in plant breeding, which has led to development of many superior corn hybrids worldwide.*

**1993**

**John R. Gorham**

*For scientific leadership and studies that have resulted in solutions of disease control problems and have advanced the basic knowledge of viral and genetic diseases in humans and animals.*

**Sterling B. Hendricks**

*For significant contributions as a chemist, physicist, mathematician, plant physiologist, geologist, and mineralogist.*

**Clair E. Terrill**

*For scientific contributions and worldwide leadership in sheep production research*

**1994**

**Charles N. Bollich**

*In recognition of superlative accomplishments in rice breeding and genetics and their consequent benefits to American agriculture.*

**Chester G. McWhorter**

*For outstanding contributions to American agriculture through basic and applied research that has resulted in improved weed-management technology, increased yields, and reduced cost of production.*

**Malcolm J. Thompson**

*For career research contributions in the field of insect and plant steroid biochemistry.*

**1995**

**Harry Alfred Borthwick**

*In recognition of contributions in elucidating the importance of photoperiodic mechanisms controlling flowering in plants.*

**William M. Doane**

*For initiating, leading, and conducting research that created new and useful products and led to the establishment of new industries based on agricultural raw materials.*

**Walter Mertz, M.D.**

*For contributions and leadership in elucidating the importance to health of several trace elements and promoting research on dietary risk factors for chronic disorders.*

**1996**

**Fred W. Blaisdell**

*For pioneering research and development of improved structures for soil and water conservation.*

**Herbert J. Dutton**

*For pioneering research leading to the establishment of soybean oil as the predominant edible vegetable oil in the world.*

**Charles Jackson Hearn**

*For developing improved orange, grapefruit, and tangerine varieties used extensively by U.S. citrus producers to replace trees killed by the 1980 freezes and to expand the citrus acreage.*

**1997**

**Morton Beroza**

*For major contributions to the development of environmentally compatible insect control strategies through discovery of lures, attractants, repellents, and pheromones.*

**R. James Cook**

*For extraordinary research on sustainable approaches to improve wheat health and for leadership in the transfer of information and technology resulting in solutions to agricultural problems.*

**William L. Ogren**

*For outstanding leadership and fundamental contributions to photosynthetic carbon metabolism leading to the discovery of new opportunities to improve the efficiency and productivity of crop plants.*

**1998**

**Thomas J. Henneberry**

*For conducting basic and applied individual and team research that has had sustained global impact on development and implementation of integrated pest management systems.*

**James H. Tumlinson III**

*For research that led to eradication of the boll weevil from the southeastern United States and the discovery of the chemical basis of plant-insect-parasite interaction.*

**1999**

**Allene R. Jeanes**

*For microbiological, chemical, and engineering research that created urgently needed, life-saving industrial polymers made from agricultural commodities.*

**Charles W. Stuber**

*For pioneering the use of molecular markers in identifying, mapping, and manipulating quantitative trait genes.*

**Richard L. Witter**

*For outstanding research contributions and leadership in the field of avian tumor viruses.*

2000

**Virginia H. Holsinger**

*For research leading to increased use of milk products and for humanitarian efforts in developing nutritious formulations for international food donation programs.*

**Marvin E. Jensen**

*For advancements in irrigation scheduling using computer models to estimate soil-water balance and for advancements in evapotranspiration theory.*

**Harley W. Moon**

*For contributions to a fundamental understanding of intestinal diseases in livestock and for development of effective control programs for these diseases.*









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